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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/733,215	12/08/2000	Badri N. Prasad	6944	3483

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DORSEY & WHITNEY LLP  
INTELLECTUAL PROPERTY DEPARTMENT  
50 SOUTH SIXTH STREET  
MINNEAPOLIS, MN 55402-1498

EXAMINER
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PASS, NATALIE

ART UNIT	PAPER NUMBER
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3626

DATE MAILED: 05/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/733,215	<b>Applicant(s)</b> PRASAD ET AL.	
	<b>Examiner</b> Natalie A. Pass	<b>Art Unit</b> 3626	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 January 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                            | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## **DETAILED ACTION**

### **Notice to Applicant**

1. This communication is in response to the amendment filed 26 January 2006. Claims 16, 21, and 27 have been amended. Grounds of rejection for claims 1-31 are presented in the instant application as set forth in detail below.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-11, 13, 16-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over LASH (2001/0020229 A1) in view of Sexton, et al, U.S. Patent Number 5, 752, 236.

(A) As per claims 1-2, LASH discloses a method for targeting a high risk patient of a healthcare plan for proactive care (i.e. preventive), using data from a plurality of electronically stored claims of the members, the method comprising:

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- a. selecting a member from a plurality of members of a healthcare plan using variables (filter criterion) to identify the member as high-use using predicted future healthcare utilization (LASH; Figures 2, 3A, 3B, 3C, paragraphs [0007], [0010], [0021]-[0022], [0037]) ;
- b. subsequent to identifying the member as high cost, calculating a relative risk for the member including comparing a score with a threshold for each of the members (reads on a quantified risk for each of a plurality of members of the healthcare plan” (LASH; paragraphs [0042], [0048], [0055]);
- c. searching the plurality of electronically stored claims of the member to identify the presence of claims variables (reads on “intervention flag”) for the member, (LASH, paragraphs [0010], [0022]-[0025]) wherein the plurality of members (patients 1 through n) includes members with “high relevance” variables (reads on distinct intervention flags) (LASH, Figure 1, paragraph [0025]);
- d. identifying a “high relevance claim variable” (reads on “medical episode driving cost”) from the plurality of claims of the member(s) (LASH; paragraphs [0007], [0036], [0042]); and
- e. generating a display showing to the user the intervention flag and medical episode in association with an identification of the member, the display being generated in response to an electronic selection of the identification of the member by the user (LASH, Figure 1, paragraph [0010]); LASH teaches in Figure 1 the display of the variables (intervention flags) A-Z, the variables are associated with medical episode (i.e., 4 emergency visits) and identifications of patients (1-n). (Lash; Figure 1, paragraph [0010], lines 8-19); LASH also teaches on page 6, Table 2 a display showing variables (i.e., intervention flags), medical episodes

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(i.e., 2 office visits for respiratory related problems), identification (i.e., 55 years old). It is readily apparent that the data of Table 2 is displayed in response to an electronic selection of the particular 55-year-old patient. (LASH; Table 2, Figure 3, element 62).

In addition, LASH teaches output means (i.e. printer or video output) (Lash; paragraph [0034]). It would have been obvious to one having ordinary skill in the art at the time of the invention to output (i.e. display) the readily available information, that is, intervention flag, medical episode, patient identification using the readily available output (i.e. printer, display) with the motivation of presenting or generating record for viewing or future references (LASH; paragraphs [0034]-[0035]).

LASH does not expressly teach the “identify the member as high-cost”.

However, the above features are well-known in the art, as evidenced by Sexton.

In particular, Sexton teaches a method further including identify the member as high-cost (Sexton; column 18, lines 60-64).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of LASH to include identify the member as high-cost, as taught by Sexton, with the motivations of lowering the costs associated with potential high-use patients (LASH; paragraph [0006]).

(B) Claim 16 has been amended to include the recitation of  
wherein the relative risk for each of the high-cost members is the quotient of the members predicted future healthcare utilization divided by an average predicted future healthcare utilization for the plurality of members.

As per newly amended claim 16, LASH and Sexton disclose a method for targeting high risk (i.e. high cost) members from a plurality of members of a healthcare plan for proactive care, using data from a plurality of claims corresponding to each of the plurality of members being electronically stored, the method comprising:

- a. filtering patients who will acquire high service utilization from the members of health care plan, using variables (reads on “filter criterion”) to identify the member as high use using predicted future healthcare utilization (LASH; Figures 2, 3A, 3B, 4, paragraphs [0004]-[0007], [0010],[0021], [0037]) ;
- b. subsequent to identifying the high use patient(s) (reads on subsequent to identifying the member as high cost), calculating a relative risk for each of the high cost members, wherein the relative risk for each of the high-cost members is the quotient of the members predicted future healthcare utilization divided by an average predicted future healthcare utilization for the plurality of members (LASH; paragraphs [0055], [0048], page 8, claims 8, 12, 17); Examiner interprets Lashes teachings of comparing a score with a threshold for each of the members (LASH; paragraph [0055]) and of calculating average probabilities and applying a probability equation to each patient record (LASH; claim 12) as teaching this limitation;
- c. identifying the presence of an intervention flag (i.e. claim variables) for each member in the set of high cost members, by analyzing the claims corresponding to each member (LASH, Figure 1, paragraphs [0010], [0022]-[0025], [0038]);
- d. selecting an intervention set from the high use patient based on relative risk for each of the patient (LASH; paragraphs [0037], [0041]-[0042], [0048], [0055], Table 2);
- e. generating a display showing the intervention flag for each member in

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association with an identification of the member (LASH, Figure 1, paragraphs [0010], [0024], [0034], page 8, lines 1-8 of claim 3); LASH teaches in Figure 1 the display of the variables (intervention flags) A-Z, the variables are associated with medical episode (i.e., 4 emergency visits) and identifications of patients (1-n). (Lash; Figure 1, paragraph [0010], lines 8-19); LASH also teaches on page 6, Table 2 a display showing variables (i.e., intervention flags), medical episodes (i.e., 2 office visits for respiratory related problems), identification (i.e., 55 years old). It is readily apparent that the data of Table 2 is displayed in response to an electronic selection of the particular 55-year-old patient. (LASH; Table 2, Figure 3, element 62); and

f. generating a display showing to the user detailed information regarding the intervention flag for one of the intervention set members, responsive to electronic selection of the intervention flag by the user (Lash; Figure 1, paragraphs [0010], [0022]); LASH teaches in Figure 1 the display of the variables (intervention flags) A-Z, the variables are associated with medical episodes (i.e., 4 emergency visits) and identifications of patients (1-n) (Lash; Figure 1, paragraph [0010], lines 8-19). LASH also teaches a display showing variables (i.e., intervention flag), medical episodes (i.e., 2 office visits for respiratory related problems), and identification (i.e., 55 years old) (Lash; Table 2). It is readily apparent that the data of Table 2 is displayed in response to an electronic selection of the particular 55 years old patient. LASH's apparatus is computerized, as such the "electronically" is readily apparent. See also LASH, Figure 3, element 62). In addition, LASH teaches output means (i.e. printer or video output) (Lash; paragraph [0034]). It would have been obvious to one having ordinary skill in the art at the time of the invention to output (i.e. display) the readily available information, that is, intervention flag, medical episode, patient identification using the readily available output (i.e. printer, display)

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with the motivation of presenting or generating record for viewing or future references (LASH; paragraphs [0034]-[0035]).

LASH does not expressly teach the “identify the member as high-cost”.

However, the above features are well-known in the art, as evidenced by Sexton.

In particular, Sexton teaches a method further including identify the member as high-cost (Sexton; column 18, lines 60-64).

The motivations for combining the respective teachings of LASH and Sexton are as given in the rejection of claim 1 above, and incorporated herein.

(C) Claim 21 has been amended to include the recitation of wherein the relative risk for each of the high-cost members is the quotient of the members predicted future healthcare utilization divided by an average predicted future healthcare utilization for the plurality of members.

As per newly amended claim 21, the claim repeats the limitations recited in claim 16 and is rejected for substantially the same reasons given above in the rejection of claim 16. “The plurality of claims for each of the high use (i.e. high cost) members” is disclosed by LASH in paragraph 0007, lines 10-16 and also in paragraph [0022]).

The motivations for combining the respective teachings of LASH and Sexton are as given in the rejection of claim 1 above, and incorporated herein.

(D) Claim 27 has been amended to include the recitation of



wherein the relative risk for each of the high-cost members is the quotient of the members predicted future healthcare utilization divided by an average predicted future healthcare utilization for the plurality of members.

As per newly amended claim 27, the claim repeats the limitations recited in claim 16 and is rejected for substantially the same reasons given above in the rejection of claim 16. "The plurality of claims for each of the high use (i.e. high cost) members" is disclosed by LASH in paragraph 0007, lines 10-16 and also in paragraph [0022]).

Regarding the step for "selecting one of the intervention set members and displaying to a user a portion of the data file corresponding to the selected intervention set member, such that the display portion of the data files includes the plurality of intervention flags of the selected intervention set member," LASH teaches the display of the intervention set member, including a plurality of intervention flags for the selected member(s); (LASH; Figure 1). LASH also teaches a display showing a selected member with corresponding information including variable (i.e., intervention flag), medical episodes (i.e., 2 office visits for respiratory related problems), identification (i.e., 55 years old) (Lash; Table 2). It is unclear if LASH displays the data in Figure 1 and TABLE 2 on a computer or video display. LASH, however, teaches output means (i.e. printer or video output) on page 3, paragraph 0034. It would have been obvious to one having ordinary skill in the art at the time of the invention to output (i.e. display) the readily available information, that is, intervention flag, medical episode, patient identification using the readily available output (i.e. printer, display) with the motivation of presenting or generating record for viewing or future references (LASH; paragraphs [0034]-[0035]).

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The motivations for combining the respective teachings of LASH and Sexton are as given in the rejection of claim 1 above, and incorporated herein.

(E) As per claims 3, 5-6, 8-9, 18, 19, 26, LASH and Sexton teach a method as analyzed and discussed in claim 1 above, further including

searching for the factors for intervention including the presence of a member of the group consisting of medical diagnosis, self-care, drug history, equipment/monitors (LASH, paragraphs [0022], [0040], [0049]);

the intervention flag (i.e. claim variable) can be selected from the group of emergency room visits, hospital admission, number of prescriptions, etc. (LASH; paragraphs [0010], [0024], [0040], [0049]-[0050]);

the association between the claim variables with each of the claims associated with the variables (LASH, Figure 1, paragraph [0049], paragraph [0059], lines 9-13, page 8, claim 12, lines 1-8);

displaying to the user the calculation of relative score (read on relative risk) for patient (LASH, paragraphs [0039], [0054], Table 2); and

wherein the intervention flag (i.e. claim variable) reflects the presence of a medical episode for which the member is not seeing an appropriate provider (LASH, paragraphs [0024], [0040], [0049]) and wherein the display indicates the medical episode and the appropriate provider (Lash; Figure 1, paragraph [0010], lines 8-19, Table 2).

(F) As per claim 4, 7, 17, 22, 23, LASH and Sexton teach a method as analyzed and discussed in claims 1, 16, 21 above, however fail to explicitly recite the predicted future cost.

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However, LASH teaches that cost data can be included along with other data (LASH; paragraph [0037], lines 10-20), and the predictive model is applied to predict high use or high cost patients. (LASH; paragraphs [0007], [0022], [0036]-[0037], [0051], [0064]. It is readily apparent that future cost is a direct function of the predicted high use or high cost patients. It would have been obvious to one having ordinary in the art to include a predicted future cost with the motivation of monitoring and reducing medical costs (LASH; paragraph [0042], lines 16-19).

(G) As per claims 10-11, 13, 20, 24-25, LASH and Sexton teach a method as analyzed and discussed in claim 1 above, further including the various factors for identifying high use patients including not taking medicine (reads on missing treatment), or do things that exacerbate the medical condition (reads on noncompliant) (LASH, paragraph [0040], lines 1-4); and

the high cost, the highest risk, and determination of the intervention flag for individual records (LASH, Figure 1, paragraphs [0007], [0010], [0022], [0038], [0042], page 8, claim 12, lines 1-8).

(H) As per claims 28-31, LASH and Sexton teach a method as analyzed and discussed in claim 27 above, further including

the high cost, the highest risk, and the determination of intervention flag for individual record, the display for showing the number of variables /flags , the filtering to identify high cost members, and the identified relative scores (i.e. relative risks) from each of the patients (LASH, Figure 1, paragraphs [0007], [0010], [0025], [0037]-[0038], [0042], [0054], and page 8, lines 1-8 of claim 12); and

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ranking according to scores representing high cost /risk patients (LASH, Abstract, paragraphs [0037]-[0039],[0048], [0054], Table 2);

wherein, responsive to electronic selection by the user of at least one of the plurality of intervention flags of the selected intervention set member, detailed information regarding the at least one of the plurality of intervention flags is displayed to the user (Lash; Figure 1, paragraphs [0010], [0022]-[0024]); LASH teaches in Figure 1 the display of the variables (intervention flags) A-Z, the variables are associated with medical episodes (i.e., 4 emergency visits) and identifications of patients (1-n) (Lash; Figure 1, paragraph [0010], lines 8-19). LASH also teaches a display showing variables (i.e., intervention flag), medical episodes (i.e., 2 office visits for respiratory related problems), and identification (i.e., 55 years old) (Lash; Table 2). It is readily apparent that the data of Table 2 is displayed in response to an electronic selection of the particular 55 years old patient. LASH's apparatus is computerized, as such the "electronically" is readily apparent. See also LASH, Figure 3, element 62). In addition, LASH teaches output means (i.e. printer or video output) (Lash; paragraph [0034]). It would have been obvious to one having ordinary skill in the art at the time of the invention to output (i.e. display) the readily available information, that is, intervention flag, medical episode, patient identification using the readily available output (i.e. printer, display) with the motivation of presenting or generating record for viewing or future references (LASH; paragraphs [0034]-[0035]).

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4. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over LASH (2001/0020229 A1) in view of Sexton, et al, U.S. Patent Number 5, 752, 236, as applied to claim 1 above and further in view of Lutgen et al. (US 2003/0167189A1).

(A) As per claim 12, LASH and Sexton teach a method as analyzed and discussed in claim 1 above.

LASH and Sexton do not expressly recite CCG categories.

However the use of medical code such as CCG to identify medical episodes is well known in the art, as evidenced by Lutgen.

In particular Lutgen teaches the use of medical code such as CCG to identify medical episodes (Lutgen; paragraphs [0029]-[0033], [0038]).

It would have been obvious to one having ordinary skill in the art at the time of the invention to include CCG categories with the motivations of providing a system that would be easy for health plans, large employers, or any other company with large claims databases to implement and maintain by conforming to standardized practices (Lutgen; paragraphs [0004], [0023]).

5. Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over LASH (US2001/0020229 A1) in view of Sexton, et al, U.S. Patent Number 5, 752, 236, as applied to claim 1 above, and further in view of Lockwood et al. U.S. Patent Number 5, 845, 254.

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(A) As per claims 14-15, LASH and Sexton teach a method as analyzed and discussed in claim 1 above.

LASH and Sexton fail to recite the average benchmark cost.

However, the use of benchmark to average cost is well known as evidenced by Lockwood.

In particular, Lockwood discloses a method for monitoring healthcare performance of providers in which benchmark is used to average cost (Lockwood; column 13, line 52 to column 14, line 65). It would have been obvious to one having ordinary skill in the art at the time of the invention to include benchmark with the motivation of determining a reasonable cost range for evaluating and monitoring costs of claims from different providers. (Lockwood; column 2, lines 32-38).

### ***Response to Arguments***

6. Applicant's arguments filed 26 January 2006 have been fully considered but they are not persuasive. Applicant's arguments will be addressed hereinbelow in the order in which they appear in the response filed 26 January 2006.

(A) At pages 9-12 of the 26 January 2006 response Applicant argues that the features in the Application are not taught or suggested by the applied references. In response, all of the limitations which Applicant disputes as missing in the applied references, including the newly added limitations of the amendment filed 26 January 2006, have been fully addressed by the Examiner as either being fully disclosed or obvious in view of the combined teachings of LASH

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Sexton, Lutgen, Lockwood, based on the logic and sound scientific reasoning of one ordinarily skilled in the art at the time of the invention, as detailed in the remarks and explanations given in the preceding sections of the present Office Action and in the prior Office Action (paper number 10152005), and incorporated herein. In particular, Examiner notes that the recited features of "comparing a quantified risks for each of a plurality of members of the healthcare plan" are taught by the combination of applied references. Please note that Examiner interprets LASH's recitation of "determining the likelihood of a particular member of a health care plan will acquire high use characteristics, particularly those with attendant high costs ...[...] ... or utilizing health care resources in such a way so as to become a high-cost patient overall relative to other patients". The present invention evaluates both the presence and absence of certain events as a measure of a patient's future risk utilizing statistical tools" (emphasis added) (LASH; paragraph [0022]) as teaching the argued limitations.

With regard to Applicant's assertion in the paragraph bridging pages 9-10 of the 26 January 2006 response that "analysis performed by LASH relates only to the subset of healthcare plan members and not the 'plurality of members of the healthcare plan'," Examiner respectfully disagrees, and notes the quoted teachings of LASH, as recited in paragraph [0022], and as noted in the preceding paragraph of this Office Action.

With regard to Applicant's assertions on page 10 of the 26 January 2006 response that ""the applied art fails to teach or suggest calculating a relative risk," Examiner respectfully disagrees. Examiner interprets Lashes teachings of comparing a score with a "threshold" (reads on "baseline") for each of the members (LASH; paragraph [0055]) and of calculating average

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probabilities and applying a probability equation to each patient record (LASH; claims 8, 12, 17, paragraph [0048]) as teaching this limitation.

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure. The cited but not applied references Gamble, U.S. Patent Number 6, 163, 770, Flag, U.S. Patent Number 6, 456, 979, Tyuluman et al., U.S. Patent Number 5, 924, 073, Robertson et al., U.S Patent Application Publication Number 2004/0024620, Hildebrand et al. U.S. Patent Number 5, 940, 802, and Hall, U.S. Patent Number 5, 498, 524, teach the environment of identifying high-risk patients.

8. Any response to this action should be mailed to:

**Commissioner of Patents and Trademarks**

**Washington D.C. 20231**

or faxed to: **(571) 273-8300.**

For informal or draft communications, please label  
"PROPOSED" or "DRAFT" on the front page of the communication  
and do NOT sign the communication.

After Final communications should be labeled "Box AF."



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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Natalie A. Pass whose telephone number is (571) 272-6774. The examiner can normally be reached on Monday through Thursday from 9:00 AM to 6:30 PM. The examiner can also be reached on alternate Fridays.

10. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Thomas, can be reached at (571) 272-6776. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Receptionist whose telephone number is (571) 272-3600.

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Natalie A. Pass

May 15, 2006



C. LUKE GILLIGAN  
PATENT EXAMINER